

Table 2-H-9
Sacramento to Bakersfield – High-Speed Train Alignment Evaluation Matrix
Modesto to Merced Alignment

Alignment = Alignment Carried Forward

Alignment = Alignment Eliminated

Alignment = Primary or Secondary Reason for Elimination

Evaluation Criteria	BNSF (Modesto Briggsmore to Downtown Merced)	W99 (Modesto West to Merced Municipal Airport)	UPRR (Downtown Modesto to Downtown Merced)	E99 (Modesto Briggsmore to Merced University)
<i>Maximize Ridership/Revenue Potential.</i>				
Travel Time	VHS 13.6 minutes	VHS 14.4 minutes	VHS 13.5 minutes	VHS 12.9 minutes
	4	3	4	4
Length	37.42 miles 60.22 km	40.2 miles 64.6 km	37.04 miles 59.60 km	34.60 miles 55.68 km
	4	3	4	3
Population/Employment Catchment	*See Modesto Briggsmore (Amtrak) Station option	*See Modesto West Station option	*See Downtown Modesto Station option	*See Modesto East Station option
	3	2	4	2
<i>Maximize Connectivity and Accessibility.</i>				
Intermodal Connections	*See Modesto Briggsmore (Amtrak) Station option	*See Modesto West Station option	*See Downtown Modesto Station option	*See Modesto East Station option
	3	1	3	1
<i>Minimize Operating and Capital Costs.</i>				
Length	Short but more urban construction	Longer than other options but all new right-of-way	Short but more urban construction	Short and low cost
	3	4	3	4
Operational Issues	Mostly BNSF with new ROW link to Downtown Merced	New right-of-way	UP Freight coordination	New alignment most of the route
	3	5	3	4
Construction Issues	Freight and Amtrak coordination	New right-of-way	UP coordination	Freight coordination Amtrak coordination
	4	5	3	4
Capital Cost	Moderate to high cost	High cost	High cost	Moderate cost
	2	3	1	3

Evaluation Criteria	BNSF (Modesto Briggsmore to Downtown Merced)	W99 (Modesto West to Merced Municipal Airport)	UPRR (Downtown Modesto to Downtown Merced)	E99 (Modesto Briggsmore to Merced University)
Right-of-Way Issues/Cost	BNSF r/w and new r/w link to Downtown Merced	New ROW	UP ROW	Mostly new alignment
	3	4	2	4
<i>Maximize Compatibility with Existing and Planned Development.</i>				
Land Use Compatibility and Conflicts				
Percent of Conflicting Existing Land Uses within adjacent buffers (Residences, Institutions, Recreation, Parks, and Open Space)	8.36	7.73	12.33	6.38
	2	3	1	3
Visual Quality Impacts				
Scenic Corridor and River Crossings	2.00	1.00	1.00	3.00
	3	4	4	2
<i>Minimize Impacts on Natural Resources.</i>				
Water Resources Impacts				
Number of Natural Stream/Lake Crossings (linear ft)	6.00 (300)	5.00 (250)	4.00 (200)	8.00 (400)
Number of Wetland Crossings	4.00	7.00	3.00	9.00
Total Acreage of Wetlands Within ROW	1.46	2.12	0.38	4.19
	5	5	5	4
Floodplain Impacts				
Number of FEMA Floodplain Crossings	8.00	3.00	5.00	5.00
Associated Length (meters) of Floodplain Crossings	8987.31	7298.04	6828.69	2461.15
Total Acreage of FEMA Floodplain Crossings	50.40	54.88	44.93	18.51
	1	1	2	4
Threatened & Endangered Species Impacts				
Count of Species w/in ROW	1.00	0.00	3.00	2.00
Count of Species along ROW	0.00	1.00	1.00	0.00
Sensitive Habitat Acreage w/in ROW	0.00	0.00	0.00	9.08
Net Sensitive Habitat Acreage along ROW	0.00	0.00	0.00	27.79
	5	5	5	4

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<i>Minimize Impacts on Social and Economic Resources.</i>				
Environmental Justice Impacts (Demographics)				
Minority Within 1,400' Buffer – 1990 Population	7786.00	8316.00	19562.00	3926.00
Low Income Within 1,400' Buffer – 1990 Households	0.00	0.00	121.00	0.00
	4	4	1	5
Farmland Impacts	*Low severance issues for alignment adjacent to existing rail r/w	* High severance impacts with “new” corridor	*Low severance issues for alignment adjacent to existing rail r/w	* High severance impacts with “new” corridor
Total Acreage of Important Farmlands Within ROW (Prime, Unique, and Statewide Importance)	199.83	422.39	145.83	296.41
	5	1	5	3
Cultural Resources Impacts				
Number of National Register Resources Within ROW	0.00	0.00	0.00	0.00
Number of National Register Resources along ROW	0.00	0.00	0.00	0.00
	5	5	5	5
Parks & Recreation/Wildlife Refuge Impacts				
Total Acreage Parks/Recreation Areas in ROW	14.26	1.70	11.90	0.00
Total Acreage of Parks/Recreation Areas along ROW	42.83	11.93	32.85	0.00
Incidences of Parks/Recreation Areas in ROW	1.00	2.00	2.00	0.00
Incidences of Parks/Recreation Areas along ROW	1.00	0.00	3.00	0.00
	5	4	2	5
<i>Maximize Avoidance of Areas with Geologic and Soils Constraints.</i>				
Soils/Slope Constraints				
Not a Distinguishing Factor				
Seismic Constraints				
Not a Distinguishing Factor				

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<i>Maximize Avoidance of Areas with Potential Hazardous Materials.</i>				
Hazardous Materials/Waste Constraints				
Not a Distinguishing Factor				

1 2 3 4 5
Least Favorable Most Favorable